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Can Formal Education Enhance Risk Management for Pastoralists? The Case of the Il Chamus of Baringo District, Kenya, 1980-2002

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Research Brief 04-03-PARIMA August 2004

The impacts of formal education in pastoral communities are not well understood. With few exceptions, little systematic research has been conducted, in part because education is not widespread among herders nor has it always been welcome. The rangelands of northern Kenya are not unusual in this respect and educational levels are much lower there than elsewhere in the country. This research brief addresses the question "can formal education assist pastoralists to better manage risk?" It argues that education should be viewed as a means to supplement pastoralism, rather than--as is commonly perceived--a way to 'exit' from it. By building on a rich data base from two different periods (1980-1981 and 2000-2002) in the Il Chamus area of Kenya, the authors suggest that 'with education' homesteads have more favorable food security and higher incomes than 'without education' units because they receive more remittances, depend less on food aid, have greater cash savings, and have higher food expenditures. However, in terms of livestock management and herd loses, the 'with education' fare as poorly during droughts as 'without education' homesteads. The brief concludes with recommendations on how education can play a positive role in improving pastoral risk management.

Background

This brief builds on homestead[1] studies from 1980-1981 (see Little 1992); quarterly surveys during 2000-2002; and a recent case study (see Lenachuru 2002). Data collected during 2000-2002 was supported by the GL-CRSP's Pastoral Risk Management in East Africa (PARIMA) Project.

The Il Chamus are a Maasai-speaking group located in the Baringo District of north-central Kenya. They were never a wealthy pastoral community even in 1980, but their livestock holdings were especially low in 2000 even when accounting for the 1999 drought (see Table 1). Available grazing lands also have declined due to human population growth and agricultural expansion. Between 1980 and 2000 population in the area almost doubled from 8,782 to 15,592 (or 32 people per square km, Kenya 2001: 144), and available grazing lands declined accordingly. Population and land pressure in the region would have been even worse were it not for the increased numbers of Il Chamus working and living outside of Baringo District, approximately 10 percent of the population in 1999.

Based on this deteriorating livestock and land situation, investment in formal education to acquire employment has become an important strategy. Two local homestead heads expressed the rationale as follows:
"With education one can get a job . . .Salary is more reliable than livestock and one can easily buy/restock his herd with salary/loan (interview, September, 2000)."
"I send children to school with the expectation of them helping us since livestock are no longer reliable. We used to be proud of many animals to support the family, but not now. Only an educated child has a value in the family for he can do many things – supply food, clothes, educate others, etc. (interview, September, 2000)."

Major Findings

Figure 1 shows the extent to which education among the Il Chamus increased during the past two decades[2]. The average number of school children per household was 0.68 in 1980-81 and 2.17 in 2000, while the percentage of household members with at least Grade 7 education rose from 3 to 18 in this period. More importantly, the percentage of household members with 10+ years of education increased more than ten-fold, and those with post-secondary training grew even more than this. Unfortunately, female advancement in education mainly has been limited to primary school levels. Approximately three times as many males as females had any post-primary education in 2000. Declining education rates for females after primary school probably relate to their early marriages and decreased potential for salaried employment in the current labor market (and, thus, an unwillingness for families to invest in their education). Less than 10 percent of Il Chamus with salaried employment who work outside Baringo District are women.

Table 1. Changes in homestead livestock holdings, 1980 - 2000.

Date	1980-81 (n=29)[b]	2000[c] (n=30)
Avg. Cattle	9	4
Avg. Small Stock	55	24
Range of Cattle Holdings	0-33	0-10
Range of Small Stock Holdings	0-216	0-75
% with less than 3 Livestock Units[a]	(4) 14 %	(13) 30 %

Notes:
(a) Livestock unit= 1 head of cattle or 10 small stock (goats and sheep).
(b) Based on data from Little (1981 and 1992).
(c) Based on PARIMA March 2000 round.

How has increased education affected employment and homestead welfare levels? Table 2 shows that 'with education' homesteads are about ten times more likely to have salaried employment, twice as likely to remit income, six times as likely to find employment outside the area, and expend almost three times as much on 'sharing with relatives' as 'without education' homesteads. Many Il Chamus with salaried employment work outside of their home areas and more than 70 percent of these assist their families.

Has increased education and income diversification (i.e., waged employment) allowed households to better manage drought-related risks? 'With education' homesteads earn considerably higher cash incomes and savings, spend more money on food purchases, have better food availability, depend less on food aid, and own more livestock than other homesteads. The vast majority of remittances from salaried employment are used to purchase foods, an option that only was minimally available in 1980-81. Even immediately after the 1999-2000 drought only 23 percent of 'with education' homesteads were using food aid, as opposed to 66 percent of 'without education' units. Mothers in polygamous homesteads recognize the importance of education for economic security and try to insure the education of their own children. One elder indicated that "there seems to be a kind of competition among many wives, each trying to push her children to school. Each one wants to see that her children are going to school among others (interview, August 2000)."

With higher levels of formal education, non-pastoral income (including wage, trading, and cultivation revenues) increased during 1980 to 2002. Pastoral income from livestock sales accounted for 65 percent of income in 1980-81, but only 25 percent in 2000-02. By contrast, the proportion of salaried/waged income more than doubled during the same period. As this paper has suggested, diversification into salaried employment can be an important means of dealing with drought-induced food shortages and livestock loses[3].

Because the Kenyan labor market constricted during the past decade, recent graduates are less successful in finding jobs than previous ones. More than 60 percent of secondary school graduates who are 22 years or younger were without jobs in 2000, but only 30 percent of older graduates were unemployed. In the 1980s even primary school graduates had as good, if not better, employment prospects than recent secondary school graduates. Twenty-eight percent of Il Chamus household heads who completed 'grades 5 to 8' in the 1970s or 1980s had some 'salaried employment' in 2000.

In looking at how 'with' and 'without education' homesteads cope with drought, it is important to distinguish between herd loses and food insecurity. Herds can be severely damaged by drought but food security not excessively jeopardized if there is waged/salaried income to purchase food. In terms of herd management, formal education seems to have little impact. More than 70 percent of livestock wealth was lost in the recent drought, and differences in

Figure 1. Changes in education trends, Ngambo, Kenya, 1980 - 2000.

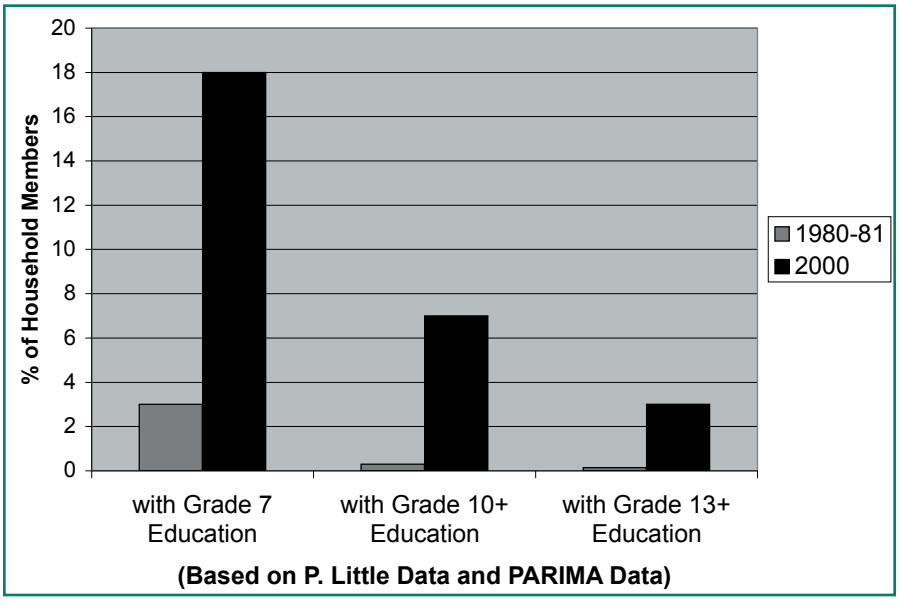

Table 2. Social and economic effects of formal education, 2000.

	Homesteads 'with secondary education'	Homesteads 'without secondary education'
% with member in salaried employment	57 %[a]	2 %[a]
% who receive assistance from members 'living away'	78 %[a]	30 %[a]
Annual expenditures assisting relatives (Ksh)	4,441[b]	1,670[b]
Annual food expenditures (Ksh)[c]	16,995[b]	10,230[b]
Total Annual Cash Income (Ksh)[c]	55,593[b]	26,542[b]
% income derived from animal sales	21 %[b]	34 %[b]
% who claim 'good' food availability	70 %[b]	49 %[b]
% who use food aid	23 %[b]	66 %[b]
Average Number of Animals Owned	9.8 cattle, 41 shoats[b]	6.4 cattle, 30 shoats[b]
Number of Animals lost in drought	19.5[b]	12[b]
Losses as % of total cattle owned	67 %[b]	65 %[b]
Annual cash savings[c]	5,634[b]	999[b]

Notes:
(a) Based on the PARIMA Study (30 households).
(b) Based on analysis of Lenachuru/PARIMA data (198 households) by P. Little.
(c) These figures are greatly inflated because they were based on monthly recall after a drought when food expenditures were very high and sharing among relatives was high. The recorded figures were adjusted since they frequently covered more than one year.

loses between 'with' and 'without education' homesteads were minimal (Table 2). In absolute numbers the 'with education' units actually lost considerably more livestock than the other group. In fact, education may actually constrain pastoral production in the area by removing herd labor (children) and then relying on hired herders who can be careless with their animals. Additionally, according to local elders "educated youth" have little respect for customary tenure rules and controls and are strong proponents of land privatization, which can greatly damage range and livestock productivity in communal grazing areas.

Practical Implications

Clearly formal education has positively impacted employment and food security and, thus, reduced risk for some Il Chamus homesteads. Those 'with education' have fared better than others along a range of food security and income indicators. Although the Il Chamus area is unique in several respects, there are practical lessons that can be noted. First, because households 'can buy' their way to food security, formal education (and the resulting employment) can have a very favorable impact on pastoral food security. Second, it is critical to distinguish between the effects of education on income and food security and its impacts on pastoralism. As the paper suggests, education does not necessarily have a positive effect on herd management and can actually have several negative impacts on pastoralism. Finally, under current labor market conditions investments in secondary education do not guarantee salaried employment nor opportunities for further training, as they often did in the past.

For policy makers levels of formal education are so low in pastoral areas of east Africa that investments must be increased just to bring them to minimal levels of functional literacy (around grades 4-5). Special attention also needs to be given to pastoral women, since they lag far behind their male counterparts in education, especially at secondary and post-secondary levels. In areas where mobile pastoralism predominates and dependence on livestock remains very high, investments in education must not jeopardize this critical livelihood. School calendars must adjust to the cyclical nature (both spatially and temporarily) of mobile pastoralism, especially in the peak dry-season periods (January-February), while school location needs to reflect the pattern of key water points and pastures. Livelihood diversification will continue to increase in pastoral areas

and though not a panacea for reducing pastoral risk, formal education can play a role as long as its limitations are acknowledged and it does not come at the expense of pastoral production.

Acknowledgements

Assistance in data entry and analysis was provided by Hussein Mahmoud and Eric Silver, both former graduate students at the University of Kentucky.

Footnotes

[1]The term homestead, which can include members of extended families, is preferable to household in describing domestic units and approximates the local concept of 'enkang' (see Little 1992). 'With education' homesteads are those where at least one member has some secondary school or post-secondary training; and 'without education' homesteads are those that have no members with secondary or post-secondary education.

[2]Because former President Daniel Arap Moi was from Baringo, educational opportunities for local residents grew considerably during the 1980s and 1990s.

[3]It should be noted that the ability to pursue lucrative forms of diversification varies significantly between 'better off' and poor homesteads. For the sake of brevity, this paper has not dealt with the amount of wealth-based variation that exists in Baringo.

Further Reading

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The GL-CRSP Pastoral Risk Management Project (PARIMA) was established in 1997 and conducts research, training, and outreach in an effort to improve welfare of pastoral and agro-pastoral peoples with a focus on northern Kenya and southern Ethiopia. The project is led by Dr. D. Layne Coppock, Utah State University, Email contact: lcoppock@cc.usu.edu.

The Global Livestock CRSP is comprised of multidisciplinary, collaborative projects focused on human nutrition, economic growth, environment and policy related to animal agriculture and linked by a global theme of risk in a changing environment. The program is active in East Africa, Central Asia and Latin America.

This publication was made possible through support provided by the Office of Agriculture, Bureau of Economic Growth, Agriculture and Trade, under Grant No. PCE-G-00-98-00036-00 to University of California, Davis. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

Design by Susan L. Johnson